Complete the following sentences:

1. A programming block that allows you to create your own files on the NXT is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. The file access block can be configured using either\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. File access Action can be \_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. The file access block can read and write both \_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_values (datatype)
5. In the send messageblock:
   1. Connection section is used to identify the connection number of the \_\_\_\_\_\_\_\_\_\_\_\_\_ NXT
   2. The message section includes the message \_\_\_\_\_\_\_\_\_ and the message \_\_\_\_\_\_\_\_\_\_\_\_
   3. wireless messages can be deposit or stored on **\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
   4. Each NXT brick has \_\_\_\_\_\_\_\_\_\_\_\_ mailboxes
6. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_block allows you to receive a wireless message from another NXT while the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_blockallows you to send a wireless message to another NXT
7. Send message block can be found in the \_\_\_\_\_\_\_\_\_\_\_ group while receive message block can be found in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_group

**Question II [8 marks; 1each]**1. Mark (T) for true and (F) for false statements.

|  |  |  |
| --- | --- | --- |
| **No.** | **Statement** | **T / F** |
|  | The file access block action is set to delete if you want to replace the information in that file |  |
|  | File Access Block allows you to create your own files on the NXT |  |
|  | When the file access block action is set to read, the information is stored inside a file |  |
|  | If the mailbox number fills up with five messages, adding one more message will cause the NXT to erase the newest message. |  |
|  | Each NXT brick has 10 mailbox numbers where wireless messages can be deposit or stored |  |

|  |  |  |
| --- | --- | --- |
| 2. Identify the programming block that is used to perform the following tasks: | | |
| **Task** | Programming Block |
| Send a wireless message to another NXT |  |
| create your own files on the NXT |  |
| Receive a wireless message from another NXT |  |

**Question III [25 marks]**

1.Identify the setting of the following send/receive message blocks. Fill the required information in the below table:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
| Connection |  |  |  |  |
| Mailbox |  |  |  |  |
| Message type |  |  |  |  |

1. Write an NXT-G code for the sender and receiver units that will do the following (use NXT-G software)

* The sender unit will read the sound level
* The sender will display the sound level values on its screen and send them wirelessly to a receiver unit
* The receiver unit will receive the sound level values.
* If the sound level values are more than 50%, the receiver unit will move forward; otherwise, it will stop moving.

Write your program here:

|  |
| --- |
| **Sender Code:** |
| **Receiver Code:** |

**Question IV [19 Marks]**

In a certain robot application, the programmer used the following configuration for the given block.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 1. The block shown is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 2. The block can be found in \_\_\_\_\_\_\_\_\_\_\_\_ group in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ palette. 3. The block is used to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 4. The numbers 1, 2 &3in the figure indicate:  |  |  | | --- | --- | | Number1: |  | | Number2: |  | | Number3: |  | | 1  2  3 |
| 1. The block shown is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 2. The block can be found in \_\_\_\_\_\_\_\_\_\_\_\_ group in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ palette. 3. The block is used to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 4. The numbers 1 and 2 in the figure indicate:  |  |  | | --- | --- | | Number1: |  | | Number2: |  | | 2  1 |

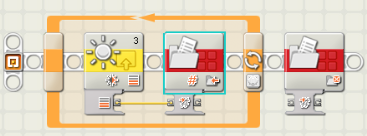
|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1. The block shown is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 2. The block can be found in \_\_\_\_\_\_\_\_\_\_\_\_ group in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ palette. 3. The block is used to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_   1. The numbers 1, 2, 3, 4 &5 in the figure indicate:  |  |  | | --- | --- | | Number1: |  | | Number2: |  | | 1  File Type  2 |

**Question V [21 Marks]**

1. Identify the setting of the following file access blocks. Fill the required information in the below table:

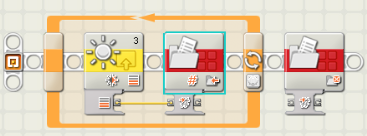
|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
| Action |  |  |  |  |
| File Type |  |  |  |  |

1. Explain the sequence of the following NXT-G Code:



1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. The following code is used to monitor the light intensity inside a room. Modify the code to monitor both the light intensity and the sound level.

(**Hint: you can use the text block**)



Write your modified program here:

|  |
| --- |
|  |